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LECTURES.

CLINICAL OBSERVATIONS UPON ABDOMINAL ANEURISM, WITH SPECIAL REFERENCE TO TREATMENT.¹

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GENTLEMEN: Embracing the opportunity afforded me by the presence in our wards of several cases of aneurism of the abdominal aorta, I shall take up this subject for clinical discussion, this morning, bringing two of the patients before you; and supplementing the records of these hospital cases with the notes of others observed by me here and else where, in order to form a group, by the examination of which we may bring into bold relief some of the more important points in the clinical history of this grave affection, that may hereafter serve as elements of diagnosis and prognosis. We shall also endeavor to establish, if possible, some general principles of treatment, through which this unhappy condition may be ameliorated if not improved.

Before looking at the clinical phenomena, let us inquire whether abdominal aneurisms differ in their anatomy from those of other parts of the body. What constitutes an aneurism? An abrupt, asymmetrical increase in the calibre of an artery, tending to the formation of a supplementary cavity, pulsating synchronously with the primary vessel, is an aneurism, no matter where it is found. We need not dwell upon the very various nomenclature applied to different forms of aneurisms, to describe peculiarities of shape or position, since for clinical purposes the anatomical division, long ago proposed by Scarpa, into true and false aneurisms is sufficient. The first class comprises those whose walls retain the three original coats of the arterial tube, a condition extremely rare in a large aortic aneurism; the second includes those formed by a rupture of the middle and inner coats, leaving the aneurism covered by condensed connective tissue, which is the ultimate variety of abdominal aortic aneurism. Should the blood suddenly escape from the vessel, it may separate the layers of areolar tissue, and form what is

¹ Delivered at the Pennsylvania Ho-pital.

termed a dissecting aneurism ; a remarkable instance of which, with the autopsy, I shall presently bring to your notice.

The pressure of the blood upon the inner surface of the large arteries, you will remember, is in health about four pounds to the square inch, a factor in the production of aneurism which should not be overlooked. The power of resistance of the vessel to this force may be diminished through impairment of the integrity of its structure, either from disease or by mechanical injury. However just an ætiological classification into spontaneous and traumatic aneurisms may be as applied to the smaller arteries, we nevertheless find that in aortic aneurism it is, at least from a clinical point of view, untenable. While a vascular degeneration may progress unsuspected until its mischief is revealed by the yielding of the walls under a slight increase of strain which would not injure the normal vessel, on the other hand a force sufficiently powerful to rupture the healthy aorta would almost inevitably be immediately fatal from shock or hæmorrhage ; an injury far less in degree, however, might lead to certain inflammatory changes, followed by softening or ulceration and the ultimate development of an aneurism. Therefore, while the division into traumatic and spontaneous appears to be a natural one, we find that, clinically speaking, it will not apply to aortic aneurism, in which these causes are generally coexistent and inseparable.

It is understood that simple hypertrophy or symmetrical enlargement of the calibre and coats of a vessel does not constitute aneurism. This is to be distinguished, however, from cylindrical dilatation, with thinning of some of the vascular coats, which constitutes a true cylindrical or fusiform aneurism, and which is not infrequently encountered in the course of the thoracic and abdominal aorta. The question may arise, Does hypertrophy of the heart ever give rise to aortic aneurism ? Many cases of cardiac hypertrophy have been before you in which no aneurism ever appeared ; and there are cases of abdominal aneurism of considerable extent, in which the heart's impulse is weakened and the organ not increased. An aortic aneurism, moreover, does not constitute such an obstruction to the circulation as would necessarily give rise directly to hypertrophy. Yet while this condition never causes the aneurism, we observe at times the aneurism associated with it, and having led to it.

In reviewing the causes of degeneration of the walls of the aorta, which is acknowledged to be the most frequent and predisposing element in the formation of aneurism, we find chronic endarteritis, or atheroma, occupying a prominent position. It is favored by many cachectic conditions of the system, such as syphilis, gout, rheumatism, or Bright's disease, and is also of frequent occurrence in advanced life. The condition may be due to an extension of an endocarditis, or it may arise primarily in the endothelium of the aorta in an inflammatory proc-

ess, leading ultimately to local fatty degeneration and the formation of an ulcer. Fatty degeneration may also occur in the middle or elastic coat of the aorta. Finally, simple atrophy or thinning of the aortic walls may appear, either as an accompaniment of advanced life, or, as suggested by Rokitsansky, from some affection of the vaso-motor nerves.

Atheroma also is favored by the intemperate use of alcohol; and Virchow has observed fatty degeneration of the *intima* accompanying cases of anæmia.

An aneurism of the aorta may attain immense size before causing death, but in its growth it gives rise to certain symptoms which are more or less characteristic. From pressure upon the vertebral column there is often set up a carious condition of the bodies of the vertebræ, leading to the production of bone pain, in addition to the neuralgia caused by pressure upon the sympathetic plexus and intercostal nerves. There are also the signs of pressure in the dyspnœa, fullness of superficial veins, and occasional ascites; even jaundice from reabsorption of bile may be produced by hepatic congestion and pressure upon the common choledoch duct. The physical signs upon which the diagnosis may be based are extended impulse, murmur and thrill, increase in percussion dullness, or, in brief, the signs of a pulsating tumor containing blood. Before considering the differential diagnosis, however, permit me to call your attention to this patient, as illustrating the ætiology of the disorder. He gives as clear a history of traumatism as could be obtained, but, as you will see, there are some reasons for believing that the vessel was not antecedently in a perfectly healthy condition.

CASE I. S. McK., forty years of age, born in Ireland, a coal miner, was admitted into our wards three weeks ago. He then told us that he had been a strong and healthy man until last April, when he was accidentally crushed by a car running down an incline. When taken out of the mine he was insensible, and bled from his mouth and nose, and subsequently vomited blood. After remaining in bed for eleven days he felt well enough to attempt to resume his work, but was unable to continue on account of pain in his back. After the first few days hæmatemesis did not recur, but he has been complaining of weakness and lumbago ever since the injury, and has not been able to work. In about six weeks after the accident he noticed a pulsation in his abdomen, which afterwards increased and became more heaving. After eating a full meal he felt particularly oppressed. His bowels generally tended to constipation, but the pain was not increased by efforts at defæcation. He had become subject to headache, and his eyesight was less good than before. When on his feet he had constant pain in the back in the lumbar region; he had also suffered from pain at night, especially after moving around during the day.

Upon admission we found localized heaving of the abdominal wall,

above and a little to the right of the umbilicus, without marked dullness on percussion. A murmur, synchronous with the ventricular systole, could be heard over the point of greatest pulsation, but it was not very harsh, and it was followed by the faintest indication of a second sound. The murmur increased in intensity in passing from any direction towards a point about three inches above the umbilicus; it was much more distinct upon the right than upon the left side. There was also a very faint murmur heard posteriorly, to the right of the lower dorsal vertebrae. No variation was detected between the radial and femoral pulses of the two sides. The liver dullness stopped abruptly at the border of the ribs, but its area was not materially diminished. No disease of the kidneys could be discovered after repeated examinations of the urine. There were no cardiac murmurs, and no marked condition of ventricular hypertrophy. Although he had a slight cough and mucous expectoration, there was nothing to show that this was due to anything more than a small amount of intercurrent bronchitis. In giving his history it should have been stated that although he denied the manifestations of syphilis, he acknowledged having had gonorrhoea several times, and confessed that he had been intemperate in his habits.

His treatment consisted mainly in the free administration of iodide of potassium. I shall not at present do more than mention it. As he has been under our care for three weeks, I will now make another careful examination into his physical condition.

You see in him a well-nourished, muscular man, whose face shows the ruddy hue of health, and disarms any suspicion of disease. But let us examine him. The pulse is full and rather strong. Auscultation of the heart is rendered a little difficult this morning by the presence in the adjacent lung of some coarse râles of bronchitis, which we have before noticed, but there are no cardiac murmurs, and the impulse is of considerable strength. The soreness he complains of in the epigastric region is not materially influenced by pressure, although he stated that this locality was tender a short time ago. The pain itself is now much relieved. Indeed, all his symptoms have ameliorated while under treatment, including headache and indigestion. We should not overlook the fact that one of the prominent features of the case from the beginning has been the pain radiating from the right epigastrium to the back and to either side, but never downwards.

The occurrence of severe abdominal pain in a man apparently healthy, in whom there is no disease of the stomach or liver, suggests urinary difficulty, and we have accordingly examined his bladder, and have found no evidence of a stone or other disease either of bladder or kidney. We are now led to study the condition of the great vessels, since we know that there is no intestinal disorder to account for the symptoms. Uncovering the abdominal surface, you observe that considerable beat-

ing is still present above the umbilicus, strong enough to move my hand, placed over this area. With the stethoscope I can hear a harsh murmur in this locality, also faintly perceptible in the back, to the right of the spine, on a level corresponding with that in the front. Upon percussion I am still unable to elicit the evidence of marked dullness.

We have in this case a history of a severe crush followed by epistaxis and hæmatemesis, and eventually by throbbing of the abdominal aorta, accompanied by a murmur and pain. It is true that the latter symptom has immensely improved since he came into the hospital, but although the pain has subsided the pulsation and murmur persist.

I shall now invite your attention to a case of abdominal aneurism in which the occurrence of a strain and heavy lifting appeared also to warrant the idea that traumatism was the sole cause of the disorder, until we inquire into the history, from which we learn that this patient has also been intemperate, and now labors under constitutional syphilis. It might furthermore be stated that the degeneration of vessels that is known to follow the essential fevers may also enter into the explanation, as he had a severe attack of small-pox attended by considerable lumbar pain some time previous to the appearance of the abdominal throbbing.

CASE II. Frank McC., a laborer, fifty-two years of age, a native of Ireland. No inherited disease, and naturally robust and strong. He has been a drinking man, and eleven years ago contracted syphilis, followed by secondary symptoms, and his wife has had a number of miscarriages. Nine years before admission he had an attack of small-pox, attended by great pain in the back; after this he was in good health until three years ago, when, following exposure to bad weather, he had severe lumbago, which did not yield to treatment. A year later this symptom had become so aggravated that he was obliged frequently to sit up at night, the pain being unbearable in the recumbent position. It should be stated in this connection that at that time, and previous to it, he had been working very hard at heavy labor and lifting. About six months after this his attention was attracted to a beating in the stomach, accompanied by constant pain, increased after eating. He had also orthopnoea, which prevented him from sleeping in bed for weeks at a time. He never had rheumatism of the joints, nor any lancinating pains anywhere, but this aching in the back sometimes extended around upon each side, giving the impression of having a tight cord around his waist. If we add to this brief outline the fact that his bowels had been generally constipated, we have a fair idea of the previous course of the disease.

Physical examination of this case also revealed marked pulsation, more evident in the erect posture than when the patient was lying down, but no thrill was detected in either position. By percussion we

found that the area of dullness outlined a tumor in the epigastric region, occupying mainly a central position, but extending rather more to the right side than to the left, and from the ensiform cartilage to the umbilicus. To the right the impulse was more expansive than toward the left. With the stethoscope, over the centre of this area, a short, rather harsh murmur was distinguished; and in the back, at the same level, the murmur was even more marked than in the front. Listening to the heart I found the evidence of a certain amount of dilatation, with a faint systolic, mitral murmur. Thus far the previous record of the case. Let me now add that after placing him upon the same line of treatment as the preceding case, for less than two months, I can now show him to you with the tumor much reduced in size, the throbbing scarcely discernible, and all pain and inconvenience gone. The treatment shall be continued for a few weeks longer, in order to confirm this good result, at which time he will, I think, be able to resume his ordinary occupation.

I have said that this is a case of abdominal aneurism. In truth I cannot see any reason to question this diagnosis. Let us now return to the preceding patient, and determine to what class his case belongs. In looking for an explanation we have two possibilities to consider, — abdominal aneurism, and aortitis; and I confess that when we have discussed the matter it will still not leave my mind entirely free from doubt; because there is no condition more difficult of positive diagnosis than abdominal aneurism in its earliest stages. In favor of the view first suggested we have the history of injury and the persistent pain. To the latter symptom I am inclined to attach much weight. Abdominal aneurism is always accompanied by pain in the back, chiefly from mechanical causes: the progressive interference with the solar plexus of the great sympathetic; the impinging upon the intercostal nerves at their origin; and, finally, the erosion of the vertebral bodies by pressure, thus producing bone pain in addition to the nerve symptoms. Another element, which might be considered distinctive of aneurism, is the definite location of the murmur in the aorta, and the localized throbbing. Thus far everything is in favor of aneurism. What is there against this view? First, there is very little throbbing; secondly, there is no evident lateral pulsation; and thirdly, and this is most important, there is no dullness on percussion, — at least there is no marked dullness.

Let us for a moment consider the other view, that of aortitis or inflammation of the aorta. In this affection we may also have pain, pulsation, and murmur, more distinct at first, less so afterwards. Indeed, a strong case can be made out for inflammation, but I am nevertheless inclined to believe that the weight of testimony is in favor of aneurism. The amount of pain was too great and persistent to be due simply to in-

flammation. The pain of aortitis is transitory and not very severe; here it was continuous, and was so marked that it was actually for relief from this symptom that he sought admission into the hospital. A small aneurism of the abdominal aorta does not generally give marked physical signs; it will not, for instance, produce a decided impulse, nor murmur and thrill, yet very early in its course we find aching pain in the back to be the chief source of complaint. The termination of a certain proportion of cases of aortic inflammation in softening or fatty degeneration, that is to say, the conditions which we have found to predispose to the formation of aneurism, warns us of the importance of prompt recognition of this morbid state and the necessity of its treatment upon those principles which I will lay down in the conclusion of this lecture, in speaking of the regimen to be pursued in cases of abdominal aneurism.

What adds to the difficulty of the diagnosis of incipient abdominal aneurism is the fact that extended impulse may be due to mere sympathetic or nervous palpitation, especially in excitable young women, where it may be found to exist in even a more marked degree than in either of these patients before you. Such cases may be distinguished by the absence of persistent murmur, thrill, and increased percussion dullness. It is true that an anæmic murmur may complicate the case, and be all the more readily heard if strong pressure be made with the stethoscope, but the character of the sounds and their presence in the vessels of the neck and elsewhere will furnish the clew to their true meaning. Moreover, the age and sex of the patient will put you on your guard; aneurisms belong, as a rule, to middle and advanced life, and are rare in women, — especially rare among those who perform no laborious or heavy work.

A more difficult differential diagnosis is that between abdominal aneurism and an overlying tumor pressing upon the aorta and transmitting its pulsations. This would give increased percussion dullness, extended impulse, and perhaps a blood murmur; but the early history and course of the disease will be of great assistance in deciding upon the diagnosis. One point, however, should be borne in mind: recalling the statement made a few moments ago, you will remember that one of the most constant signs of aneurism is pain in the back; with which you will often find associated spinal tenderness from vertebral disease. Do not forget this fact; inquire into the character of the pain, and see if tenderness exists when pressure is made upon the spinous processes. In aneurism of considerable size you would also expect to find a harsh murmur, heard most distinctly in the back, somewhere along the course of the aorta. In regard to the presence or absence of thrill, or fremitus, but little importance can be attached to it. While it frequently accompanies abdominal aneurism, there are cases which attain a large size

without it. The absence of thrill is therefore not conclusive evidence on either side. In malignant growth overlying the aorta you will generally find, besides vomiting and digestive disorder, a certain amount of cachexia, which does not occur in aneurism, except, indeed, from pressure upon the thoracic duct, as in a case which came under my observation in private practice some years since.

I have brought before you two unusual illustrations of the successful termination of abdominal aneurism, or, at least, of its arrest. Had I time I could give you, from my own experience, several more cases: one in particular, a man of about thirty-four years of age, was under my care for sixteen months, when his recovery was so perfect that thrill and impulse disappeared, and abdominal, percussion-dullness only was left. In another case the man remained more or less continuously in bed for eight months, with the greatest improvement in his condition. In a third, a clinical case, which I saw at intervals of several months for a period of about a year, a remarkable change in the physical signs and general condition took place; but while the aneurism could always be detected, it had greatly diminished in size, and pain had all gone, and no longer interfered with the patient's pursuing his occupation.

I wish I could tell you that these results were always to be obtained by due management of abdominal aneurism. Unfortunately, sooner or later, this affection is apt to prove fatal, though it is astonishing to observe with how little impairment of the general health it may be associated, even when the physical signs are marked. I could of course read you the notes of many cases illustrating the usual progress of the disease, and refer to much post-mortem evidence that I have had the opportunity of inspecting, even in cases in which the symptoms have been latent; but this would make my discourse this morning too long. You will, moreover, find numerous cases on record, though proportionately far fewer of such favorable terminations than I have this morning called your attention to. The following is an instance of the unfavorable termination of the disease. I will very briefly state to you the clinical history and notes of the autopsy of this patient, who was lately in the wards, and whose case is an excellent illustration of the rare form of dissecting abdominal aneurism.

CASE III. A leather cutter, of American birth, forty-two years of age, of temperate habits, and claiming to be free from inherited or acquired taint, was seized, on the morning of admission, with pain in the right hypogastric region, extending backward to the sacrum, down the back of the legs, and involving the right testicle. He never had experienced such an attack. The pain was so severe that he could not walk nor stand, and nearly fainted on the street, and in this condition he was found and brought by his friends into the hospital. His bowels had been freely moved half an hour before; he had not eaten anything

unusual, nor had he been engaged in any hard work. He stated that for a number of years, while at his occupation, he had been in the habit of leaning against the cutting board, pressing it into the right hypochondriac region. There was a reducible inguinal hernia upon this side, and also a tendency to ventral hernia.

The patient was not emaciated, but was sallow and anæmic. The heart was excited : first sound weak, second distinct; pulse feeble. There was no swelling of the feet, and no ascites.

Without stopping to give the detailed physical signs, I may state that there was evidence of an irregular mass overlying the aorta and receiving a heaving impulse from it, occupying the whole of the right umbar and inguinal regions, merging into the hepatic dullness at a point two inches from the middle line, filling the right half of the umbilical region, and extending a little beyond the centre. The mass was resisting and somewhat tender. No murmur and no fremitus could be perceived, but the sounds of the heart were transmitted : the first sound was dull, low-pitched, and murmurish, yet there was no decided murmur; the second sound was accentuated and distinct. He had retention of urine, requiring the constant resort to the catheter. After a week's treatment no material change could be detected, except that the patient was sinking into a low state; he had a dry, brown, and fissured tongue, and a more cachectic appearance. Auscultation of the back could not be attempted on account of faintness brought on by any change of position. The bowels had been freely moved, yet the dullness remained as before. On the eighth day the patient died in collapse. He had not complained of any more attacks of acute pain, but had more or less aching in the back during the treatment, requiring small doses of anodynes.

With the sphygmograph the right femoral artery was more feeble than the left, but neither was as strong as the radial at the wrists.

At the autopsy, the left ventricle was thought to be thickened, and it contained a fibrinous clot; all the valves were healthy. The ascending aorta was dilated, the walls were thickened, and yellow spots of atheroma were seen upon its endothelial surface. The remainder of the thoracic aorta appeared to be healthy. The right lung in its lower part was deeply congested.

Upon inspecting the peritoneal cavity it was found that both flanks were filled with a doughy mass which extended, on the right side, down into the scrotum. Its color was reddish-black, seen through the smooth and shining peritonæum, which was stretched over it. The mass displaced the cæcum forwards, upwards, and inwards, thence extending upward into the hypochondriac region.

The aorta being divided along its posterior surface, a small sacculated dilatation on the anterior aspect was discovered, about three inches in diameter. The inner surface of the aneurism displayed several fissures, the

wall was thinned, and, at one point, a firm black clot occluded what had been a recent rent. The large mass was composed of tolerably firm black clot, which had escaped into the loose connective tissue, and had dissected the peritonæum from the whole posterior wall of the abdomen; its greatest volume was to the right of the vertebral column. The clot had crept around and completely enveloped the kidneys, the great vessels, and the right testicle, the right half of the scrotum becoming livid after death.

The aneurism was below the cœliac axis, in the neighborhood of the origin of the superior mesenteric artery, if, indeed, it did not include this vessel. Another small aneurismal dilatation was found on the right external iliac artery, which was about the size of a walnut; it was also filled with adherent clot, leaving, however, a passage for blood on one side.

Let us now return to some of the points in the pathology and treatment of the affection as presented by the cases we have been reviewing. In considering the cause of abdominal aneurism, we find that in none of these cases could we attribute it to senile change. They were too young to have atheroma from advanced age. In this connection let me broadly state that where abdominal aneurism occurs in early life or beginning middle age, it is generally due to syphilis. In fact, its prevalence among soldiers has been explained in this way. You must not, however, suppose that syphilis directly produces aneurism, but that certain changes of a chronic inflammatory and degenerative character take place, by which the muscular and elastic tissues are weakened and prepared to yield suddenly under an ordinary strain; or adjacent structures have their resisting power in like manner reduced, and gradually give way. Its agency in the production of atheroma has been particularly recognized by medico-military authorities. Syphilis, I regard as a very active and positive predisposing cause of aneurism of the aorta.

In a case of abdominal aneurism what should be the principles of treatment? The regimen I have pursued in these cases, and which has been singularly successful in my hands, has been absolute rest in bed, a plain, unstimulating, nutritious diet, and, finally, the persistent use of iodide of potassium. In the first patient this treatment has produced so much change in the short time that he has been under our care that you would scarcely recognize in him the haggard and suffering man who sought admission less than one month ago. This course is that which I have been accustomed to follow of late years, and I have seen, I think, cure resulting from it in undoubted cases. In the case of a gentleman, the superintendent of a factory in Delaware whose history I have already referred to, who came to me suffering from abdominal aneurism, and whom I kept in bed continuously for eight months, dur-

ing all of which time he took large doses of iodide of potassium, such a change was wrought that at the end of this period he seemed to be completely cured, and resumed his occupation.

The instructions must be positive to continue in the recumbent posture, while the treatment by the iodide is pushed to its full constitutional limit. If the stomach reject the remedy, or the patient become disgusted and nauseated, stop it for a time, and return to it in smaller doses, again steadily increasing as the stomach becomes accustomed to it. I generally commence with ten-grain doses, given thrice daily, and run it up to one hundred and fifty or even one hundred and eighty grains per diem; it is rarely necessary to go beyond this. It is also important to keep down the force of the circulation, so that the heart shall be at not over 75 to 80, by the administration of aconite or veratrum viride. By this means we favor the deposition of a laminated fibrinous clot on the inner wall of the aneurism, in the hope that it will gradually encroach upon the cavity until it becomes entirely obliterated.

The explanation of the treatment by iodide you might think was suggested by what we have considered as the frequent cause of the trouble, — syphilis; but apart from this the iodide has been found to be an excellent remedy in internal aneurisms. This is not an old treatment; at least its value has not been appreciated until within a few years. Balfour,¹ in 1869 and 1871, reported several cases of aneurism cured by this therapeutic plan, but it had been previously recommended as early as 1859 by Bouillaud. A number of successful cases have since been reported, of which I have published a few. The management by astringents, particularly tannic acid and the acetate of lead, has not met with much favor. Ergot, which has been administered in other internal aneurisms, I have employed, but have thus far failed to find it of any value in abdominal aneurism. A series of cases of cure of thoracic aneurism by electro-puncture have been reported by Ciniselli² and others, Dr. McCall Anderson³ having had very favorable results in two cases. For manifest reasons this plan is inapplicable to disease of the abdominal aorta, and I will not, therefore, devote any time to its consideration. The treatment by ligature or distal compression I need not refer to, as the subject is fully discussed in your treatises upon surgery, perhaps more particularly by Mr. Holmes in his lectures upon the surgical treatment of aneurism. Returning to the therapeutic consideration, we find that cases have been reported in which a cure has followed the postural treatment alone, with a restricted diet, but when we add to this the administration of the iodide of potassium and sedatives,

¹ Edinburgh Medical Journal, 1869 and 1871.

² Quoted by Quincke, Ziemssen's Cyclopædia, vol. vi., page 455.

³ Clinical Medicine, London, 1877.

we have, medically speaking, put our patient under the most favorable conditions for his recovery. Under the influence of potassic iodide the force of the heart's contraction and the blood pressure are both modified, — properties which are not possessed by the remaining iodine salts. I feel confident that by this regimen the prognosis of the affection is rendered less grave, and moreover permanent relief may be confidently expected in a large proportion of cases, particularly in the earlier stages of the disease, provided the treatment be faithfully carried out.

THE PHYSIOLOGY OF SLEEP.

BY E. F. HURD, M. D., NEWBURYPORT.

It is well to be cautious how we accept theories, for one stubborn fact, as Tyndall has said, will upset a whole freight train of theories. It once appeared to us settled that the proximate cause of sleep was anæmia of the cortical gray matter, — the centres of ideation, comparison, and volition. The theory worked very well. *A priori* it appeared quite probable that less blood should go to the brain during its quiescence than during wakeful activity.

Moreover, there were not wanting observations to suggest and confirm this view. During intense thought and passion did we not see the temporals swell and throb and the face become turgid, and during the insensibility of syncope, epilepsy, catalepsy, did not the external appearances favor the opinion that the brain was relatively anæmic? Must there not be relative anæmia during the insensibility of sleep also?

We had carefully read and noted Monroe's observations and conclusions as to the contracted condition of the arterioles and the pallor of the convolutions during sleep; these had been confirmed by Hammond and Brown-Séquard. Durham's investigations on the physiology of sleep had been published as early as 1860, and seemed to be exceptionally careful and accurate. Pierquin a little earlier recorded an interesting series of observations on a girl in Montpellier who had lost a large portion of her scalp and skull. "Her brain could be seen for a considerable extent of surface. When she was in dreamless sleep her brain was motionless and low within the cranium; but when her sleep was imperfect and she was agitated with dreams, her brain moved and beat, more blood was sent to it, the arteries were relaxed, and the brain protruded through the opening in the skull. When she was awake the same difference was observed, in accordance with the activity or quiescence of her mind."¹

Donders "made a cruel but striking experiment. He cut away a

¹ A. Combe's Physiology, page 147.

part of the skull of an animal, and cemented in its place a piece of glass, and observed that in the waking state the brain is larger than it is during sleep, while in the latter condition it is pale and bloodless."¹ Brown-Séquard, in his *Leçons sur les Nerfs vaso-moteurs*, had given his assent, based on similar observations, to the same view, and had said that sleep "resembled a light attack of epilepsy." If any further support to the *anæmia* theory was needed it seemed to be given and all the demands of rigorous criticism satisfied when, in 1869, Hammond, of New York, published his little work on Sleep and its Derangements, wherein a number of independent researches pointed to the same conclusion.

It was very convenient to have a good theory of causation, for now it was plain how hypnotics must act, and what were the indications in insomnia. If chloral, bromides, anæsthetic and narcotic agents, caused sleep, it would seem to be, for the most part, by contracting the cerebral blood-vessels, and thus diminishing the blood supply.² The vaso-motor system had the principal part in this physiological change. To be sure, experimental researches had given contradictory results, but on the whole there seemed to be a considerable number of facts that went to show that hypnotics did so act.

Alas for human liability to err! We thought that all this was settled, but we were mistaken, and new experiments and new observations are imperatively needed, if, indeed, anything more concerning the intracranial circulation and other physiological changes during sleep and allied states of unconsciousness can ever be determined.

M. Vulpian's thorough and seemingly exhaustive researches on the physiology and pathology of the vaso-motor system have been fruitful in important results. Called in 1873 to the chair of experimental and comparative physiology, rendered vacant by the resignation of Brown-Séquard, he delivered a brilliant course of lectures on the vaso-motor system, which have been recently published in two volumes. Whatever merit may be attached to his former work, published in 1866, *Leçons sur la Physiologie générale et comparée du Système nerveux* — a work which has deservedly become classical — is, we think, eclipsed by this recent work of M. Vulpian.

¹ North British Review, June, 1868.

² The older theory, which ascribes the actions of hypnotics to modifications in the nutrition, or molecular grouping of the cells, is the more probable view. Binz "concludes an article on the officinal sleep-producing substances (*Archives of Experimental Pathology*) by saying that these agents possess the power of producing a kind of coagulation of the substance of the cerebral cortex. Morphia, chloral, ether, and chloroform possess a strong affinity for the substance of the cortex of the brain in man; and when they are introduced into the blood they enter into combination with the cerebral substance, opposing or impeding the disintegration of the living substance, and thus rendering it unfit to discharge its functions." Ranke has performed experiments which go far to prove the coagulating power of anæsthetics and narcotics on nerve substance and on muscles. See *Lancet*, American edition, 1878, page 94. See also Appendix to Herbert Spencer's *Principles of Psychology*, vol. i.

After investigating the rôle of the sympathetic in various functional nervous diseases, where too important a part seems to have been assigned to the vaso-motors of the brain and spinal cord, — *reflex paralysis*, the mechanism of whose production, he thinks, is altogether different from that taught by Brown-Séquard ; ¹ *hysteria*, the motility of whose phenomena is the expression of real modifications of the elements of the cortical substance of the nerve centres, not appreciable to gross or even microscopic vision, and easily reparable ; *tetanus*, *hydrophobia*, where, whatever the morbid erethism of the bulbo-spinal centres, there is no constant vascular lesion, and where, to account for the frightful manifestations, we must again resort to the vague term "molecular modifications," inappreciable, it is true, but real ; *epilepsy*, where, again, Brown-Séquard's elaborate theories of vaso-motor action are found inadequate to explain the principal phenomena of the attack, ² — M. Vulpian devotes part of a long chapter (Dix-Huitième Leçon) to the consideration of the physiology of sleep and the theory of cerebral anæmia. The question which he proposes for discussion is the following : "Whether the minute vessels of the encephalon undergo constant modifications in size and in contents in correspondence with the activity or want of activity of the brain ; if the blood-vessels are relatively full when the hemispheres are working, and relatively empty when these centres are in a state of repose." There are two ways of reaching a solution of this question : one is by observations of the encephalon during natural sleep ; the other by experiments made with hypnotic agents, and observing the results, a portion of the skull of an animal having previously been removed. M. Vulpian has performed numerous experiments which go to show that the profession has been too hasty in adopting the conclusions of Durham, Hammond, and others pursuing a similar line of investigation. It is quite true that the observations of these experimental physiologists were correct ; the error was in concluding that, because in certain instances the arterioles were found contracted and the brain pale and sunken during sleep, therefore the anæmic condition was the procuring cause of sleep. Vulpian admits that in ordinary sleep less blood circulates in the cerebral centres than when awake, but this relative anæmia is rather the concomitant, or result, than cause of the suspension of cerebral activity. "I am compelled to believe that during the first moments of sleep there is a degree, more or less marked, of encephalic congestion analogous to the congestion of the face and of the conjunctivæ which is observed at the same time. But in all probability, the respiration soon becoming

¹ Vulpian believes that material alterations in the nerve centre always exist in these cases of reflex paralysis, the result of peripheral irritation : "Ces modifications ne consistent évidemment pas en une destruction de matière ; il y a sans doute un simple dérangement moléculaire." Tome ii., page 99.

² Vulpian's theory here too is "special modifications of the anatomical elements of the different parts of the encephalon, the result of special irritants, peripheral or central."

calmer, more regular, a little less frequent, the movements of the heart becoming a little slower and less energetic, the cerebral circulation must undergo a like modification, and the congestion of the onset will give place to a slight degree of relative anæmia. Perhaps, also, the vaso-motor apparatus, by reason of the relative functional repose of the cerebrum, takes on a slight predominance of action, having for consequence a state of feeble augmentation of the *tonus* of the different vessels of the organism, those of the encephalon included."¹

Among the objections to the *anæmia theory* is this one, forcibly stated by Vulpian: that in individuals suffering from *anæmia*, of whatever cause (hæmorrhages, chlorosis, cachexia), there is ordinarily a marked tendency to insomnia. If the theory of Durham were well founded, one ought, in these conditions, to find a disposition to somnolence. On the other hand, in states of plethora the tendency to sleep is often very conspicuous. It is so in general after a full meal. To talk about the replete blood-vessels of the stomach and intestines, after a repast, *deriving* blood from the encephalon seems nonsense when we remark the turgid countenance, the injected eyes, the throbbing temporals, of the sleeping gourmand.

Another objection to the theory is the fact that the results of ligation of the encephalic blood-vessels do not favor it. Vulpian, after numerous trials in this direction, declares that "it is impossible, in practicing graduated compression of the encephalic vessels, to produce sleep at any moment whatever of the experiment." Moreover, in animals faradization of the cephalic ends of the two cervical sympathetic nerves has repeatedly been practiced. "The result was some amount of cerebral anæmia [*un certain degré, assez faible relativement*] without the least manifestation of somnolence."²

It would seem that if there were any causal connection between excitation of the vaso-constrictor nerves of the encephalon and sleep, electrization of the sympathetic in the neck should cause somnolence; nothing like somnolence occurred in Vulpian's experiments.

How about the action of anæsthetics and hypnotics? Hammond's experiments with ether determined a decided pallor of the surface of the brain in animals on which he operated. Vulpian's experiments, many of which were made before his class, were not attended with any marked or constant modification of the blood-vessels in the brain, whether the inspection were made with the naked eye or with a lens.³

Other experiments, made with chloroform, equally failed to show any marked effect on the blood-vessels; "the cerebral anæmia, inconspic-

¹ Appareil vaso-moteur, tome ii., page 154.

² Loc. cit., page 151.

³ "When the dog is profoundly etherized, it is seen that the movements of the brain (respiratory and circulatory) are not notably different from what they were before the etherization. It is the same with the vessels of the pia mater." (Loc. cit., page 157.)

uous under etherization, is still less marked during the insensibility of chloroform."¹ As for *opium*, its effects on the little vessels of the pia mater appeared to be *nil*. The opium in solution was injected under the skin; in half an hour the animal was in a state of profound somnolence; "the vascularity of the cerebrum was not changed in any appreciable manner."

Other experiments were made with hydrate of chloral. Deep sleep resulted; the encephalon, denuded of a portion of its cranial covering, was inspected; no modifications in the condition of the vessels of the pia mater were discernible.

Vulpian's conclusions from his carefully conducted experiments is that sleep, natural and artificial, is a phenomenon essentially independent of the vaso-motor system and the state of the blood-vessels. The anatomical elements of the gray substance of certain parts of the encephalon have a *habit*, at certain times and under certain conditions, of *lapsing into a state of functional inactivity*. It is an "*engourdissement*," — a torpor. The vascular, cardiac, and other manifestations are only accessory; they may be concomitant or consecutive, but they do not play any essential rôle in the physiology of sleep.

It seems to me probable that this may be for some time to come the last word on the subject, and that neither *this* condition of the blood-vessels nor *that* condition is the physiological antecedent of sleep; that, in fact, we must seek for the cause of this periodical phenomenon, so essential to our well-being, so suggestive, moreover, of the essential *oneness* of the physical and psychological — body and mind — in that invisible world of molecules whose polarities, permutations, and combinations produce results that baffle intellect and imagination to comprehend, and make nature herself seem transcendental.²

It is evident that for a long time to come hypnotic agents must be given from empirical considerations solely, and not from any supposed knowledge of their *modus operandi*. Of course, it will be quite proper to indulge in any amount of reasonable speculation as to how the cerebral cells are affected by drugs, and it must be admitted that considering the unfathomable mysteries of the molecular world, of which we get some hints, we must not be surprised at any future revelation concerning them, just as Lord Beaconsfield says that we need not be surprised at anything which takes place under a republican form of government!

It is doubtless true that while chloral and soporifics generally do not act by shutting off in part the arterial blood current, yet since a certain

¹ Loc. cit., page 158.

² "Obviously things must either be conceived as by nature passive or active; if passive, they can only be moved by superior powers, independent of them; if active, they possess in themselves the conditions of their activity. Thus, on one of two fundamental suppositions respecting the activity of objects rests every possible explanation we can frame of the mysteries around us." — G. H. Lewes, *Aristotle*, page 27.

amount of relative anæmia is generally an accompaniment of natural sleep, — a full supply of oxygenated blood being essential to active cerebration, — and since the *minimum* of cerebration (with arrest of those destructive changes which are the correlatives of states of consciousness) is hardly compatible with the *maximum* of arterial blood supply, measures tending to diminish the amount of blood circulating in the brain, such as cold to the head, and derivatives, are indicated in insomnia. These will often fail where, were the anæmia theory true, they should succeed. The causes of insomnia are very generally subjective, and no remedy is effective which does not include a radical change in the habits, modes of thought and feeling, and surroundings of the patient.

RECENT PROGRESS IN SYPHILOLOGY.¹

BY EDWARD WIGGLESWORTH, M. D.

The Pigmentary Syphiloderm. — Dr. I. E. Atkinson, in a paper² read at Saratoga, August 27, 1878, before the American Dermatological Association, gives the histories of three cases of this rare manifestation, and adds that "the resistance offered by this lesion to the influence of anti-syphilitic remedies undoubtedly affords their most efficient weapon to those who combat the doctrine of its syphilitic nature. It is, for example, argued that all syphilitic alterations, especially those of the earlier constitutional periods, are promptly antagonized by the administration of mercury, and that the hyperpigmentation under discussion, not being modified by this drug, cannot be a syphilitic manifestation. Such a conclusion is based upon incorrect ideas of the nature of the pigmentation. The pigmentary changes following the earliest syphilitic symptoms are always due to the preëxisting hyperæmia; their duration and intensity are usually proportioned to the duration and character of the hyperæmia, and they are principally deposited in the connective tissue of the corium, in the region of the vascular distribution. The *rationale* of pigmentation is too little known, but we do know that pigment disappears readily after the recession of a hyperæmia of short duration, while after an old eczema or chronic ulcer it may remain for years. Why this is so is not known. It is a matter of universal clinical experience that the pigmentations following the early syphilitic eruptions are but little disposed to become permanent, and are readily reabsorbed. With the pigment substance of the epidermis, on the contrary, the case is different. Here the hyperpigmentation may readily occur quite independently of hyperæmia, and is due to an increase of the melarin, the physiological pigment of the skin.

¹ Concluded from page 796.

² Chicago Medical Journal and Examiner, October, 1878.

"It is a matter of general experience that the non-vascular hyperpigmentations are provokingly obstinate and beyond the reach of internal medication. No one can explain why the different cachexiæ, or why uterine disorder should induce a hyperpigmentation in the rete Malpighii. There is no reason why the syphilitic dyscrasia, as distinct from any cachectic condition, may not equally evoke similar pigmentary changes, and with the light thrown upon the subject from time to time by corroborative cases, I have no hesitation in saying that it does evoke them, and venture to suggest that they may be amenable to the same therapeutic agencies."

Dr. G. H. Fox considers¹ this pigmentation as vitiliginous and of slight importance; notes its occurrence upon males as well as females, and that it may appear elsewhere than upon the neck; and supports the view that it is not a direct manifestation of syphilis, like ordinary syphilodermata, but a non-specific affection of the skin occurring on the site of and as a sequel to a syphilitic eruption, and that as a sequela it is uninfluenced by mercury, independent of, although the result of, syphilis, and in time disappears. In an excellent summary he adds that the white spots are not so by contrast, but by actual loss of pigment; that remains of the preëxisting lesions may sometimes be observed as dark central spots; and that the hyperpigmentation around the spots is of secondary importance, though often the most striking feature of the affection.

Syphilitic Pneumonia. — Uncomplicated cases of distinctly syphilitic pneumonia are rare. Sacharjin reports² two such, and summarizes the diagnostic peculiarities of this disease as distinguished from those of phthisis occurring in syphilitic or non-syphilitic persons. As means of differential diagnosis he cites: (1.) The characteristic anamnesis. (2.) The strength of the patient's constitution, since weakly persons of phthisical tendencies succumb too early to manifest the late syphilitic affections to which syphilitic pneumonia belongs. (3.) The objective evidence of consolidation of the lungs, dullness on percussion, diminished vibration on palpation, and abnormal respiration on auscultation; the marked sinking of the supra and infra claviclar regions; the difficulty in breathing, and the oppression and pain in the chest. (4.) The absence of hæmoptysis, cough, expectoration, and râles. (5.) The non-existence of fever. (6.) The rapid improvement under the use of mercury or iodide of potassium.

These signs can of course be no longer clearly distinct if the original syphilitic pneumonia has not been recognized, and has, while unheeded, become complicated by inflammation of the bronchi or pleura, or by acute or chronic non-syphilitic pneumonia.

¹ American Journal of the Medical Sciences, April, 1878.

² Berliner klinische Wochenschrift, January 21, 1878.

Syphilitic Phthisis.—The tabulation by Dr. Robinson¹ of such cases of syphilis occurring in military hospitals as evinced subsequently signs of pulmonary disease has shown two forms under which syphilis of the lung may present itself: one affecting the base, and very rare; the other, more common, and limited to one or both apices. The characteristic signs of this lesion are, upon auscultation, loud, harsh inspiration with a similar expiratory murmur, vocal resonance being more or less distinct. Dr. R. E. Thompson,² in connection with the fact deduced by the Pathological Society's recent debate upon visceral syphilis, namely, that apart from gummata and tubercular phthisis syphilitic disease of the lung is of rare occurrence in the post-mortem room, and consequently the recognition by pathologists of the morbid effects of syphilis in the production of pulmonary disease is very difficult, has furnished the clinical results of the observation of such cases for several years past in the Brompton Hospital for Lung Diseases, and, proceeding from the opposite point of view to that of Dr. Robinson, arrives at similar conclusions. He regards the pathological conditions of the syphilitic lesion as a generally diffused alteration of the lymphatics, affecting primarily the alveolar tracts, and extending along the bronchial vessels, so as to produce very considerable peri-bronchial thickening and stiffening, with consequent dyspnoea. His characteristic sign is the percussion note, which, accompanied by resisting palpation and being markedly dull under the clavicle and supra-clavicular space, regains its natural note below after shading off from above downward, gradually, in fact almost imperceptibly,—a symptom peculiar, he holds, to the lesion of syphilis.

*Syphilitic Disease of Bone.*³—A girl aged seventeen, of syphilitic parents, noticed a small swelling on the lower and outer side of her left leg just above the ankle-joint, which was unaffected. This increased, with pain at night, and in a year had become a clearly defined enlargement of the lower end of the shaft of the tibia and fibula. Around their whole circumference four centimetres above the joint, the skin and soft tissues were natural in appearance, though indurated. No other bones were affected. Those parts of bone which are not covered with periosteum remain free from disease in these cases. Parts of bone covered by synovial membrane or articular cartilage are never primarily implicated in the abnormal growth under consideration. So also with cartilage, except when covered with perichondrium. The disease begins in the periosteum, and is amenable to treatment prior to the formation of true osseous structure. In this case amputation was performed for intercurrent traumatic injury, and the diseased ends of bone

¹ Lancet, May 5, 1877.

² Lancet, September 15, 1877.

³ C. Macnamara, in Lancet, October 20, 1877.

showed no osteitis, but a uniform layer of new bone outside the tela ossea of the original bones. This periosteal growth occurs in inherited syphilis at the extremities of the long bones, because in growing bones the most active changes are there going on, just as increased action at the site of a fracture causes callus by augmentation of growth. Syphilitic changes differ thus from tuberculous ones, which originate in alterations in the growth of the round cells contained in the medullary tissue. In tuberculous disease, also, the thermometer could not be relied upon, but with syphilitic changes the temperature regularly rose to 101° or 102° F. at night, and fell to 99° F. towards morning (in spite of mercury or iodide of potassium), unless when twelve grains of quinine with one eighth of a grain of calabar bean were given, when the rise was checked for several days at a time. Such growths may also, by obliteration of blood-vessels, cause necrosis of bone tissues.

Syphilitic Insanity.—In a lecture upon insanity,¹ Dr. E. C. Seguin speaks of coma, mania, melancholia, or a false general paralysis as being among the results of syphilis, and recommends in some cases of mania or melancholia, where there is no family predisposition to insanity, the administration of large doses of iodide of potassium and the employment of mercury. The general paralysis, so called, of syphilitics is peculiar in character. We do not obtain the regular gradations and stages of the true disease. The moral perversion which is peculiar to general paralysis is absent; neither do we see the pure exalted notions. The fibrillary tremors that are so well marked in general paralysis are not present here. The articulation is more mumbling in character. We likewise are apt to have a great deal of actual paralysis of cranial nerves or body in these cases. In true general paralysis after attacks of hemiplegia the patient regains his full strength, whereas this is not apt to occur in the syphilitic variety. The following table will perhaps show clearly the main differences:—

SYPHILITIC GENERAL PARALYSIS.	TRUE GENERAL PARALYSIS.
Absent.	Prodromic stage.
Rare or absent.	Exalted notions, numerous and varied, and relatively exalted according to the position in life.
Speech is thick.	Speech is tremulous and jerky.
Absent as a rule.	Tremor of hands and lips.
Paresis or actual paralysis.	Preservation of strength.
Apt to be open or wide.	Pupils are apt to be contracted.
Palsy of the third or of other cranial nerves.	None.
Headache nocturnal.	None.
More serious aphasic attacks.	Transient aphasic attacks.
Progressive, except under treatment.	Spontaneous remissions.

Some other differences between the two conditions are as follows:

¹ Hospital Gazette and Archives of Clinical Surgery, September 12, 1878.

The patient with syphilis has none of the cravings or abnormal appetites of the other; the latter feels an impulse to get drunk, or to have an excess of coition. The tendency to excessive coition is absent in syphilitic paralysis, and indeed there is marked loss of the virile power. The temperature changes are also absent in syphilis of the brain. The rise in temperature in general paralysis of the insane is very great, often reaching to 103° F. in exacerbations. There is no rise of temperature in syphilis of the brain, except, perhaps, when the patient has hemiplegia from a large lesion.

The most important point is that in syphilis there is a paralysis; in general paralysis there is irritation and incoördination without true paralysis.

Syphilitic Coma. — Syphilitic coma, described but lately by Erlenmeyer, is only interesting clinically. The patient suddenly becomes unconscious; there is no definite paralysis; the pupils are open; he receives food and swallows. The condition is not unlike that of an extremely drunken man.

Erlenmeyer relates a case of an officer who was found in bed in a comatose state, and remained so for a length of time. A syphilitic history was determined; he was treated in accordance with that view of the case by inunctions of mercury and by iodide of potassium internally, and was cured. There is nothing yet known as to the pathology of these cases.

PROCEEDINGS OF THE OBSTETRICAL SOCIETY OF BOSTON.

C. W. SWAN, M. D., SECRETARY.

APRIL 14, 1877. *Case of Excessive Salivation during Two Successive Pregnancies; Face Presentation; First Position; Rotation effected by Forceps; Child Alive.* — DR. RICHARDSON read the case, which was published in the JOURNAL, vol. xcvii., page 29.

DR. STEDMAN asked if traction were employed in the manœuvre.

DR. RICHARDSON replied that rotation only was first performed, and subsequently extraction.

DR. SINCLAIR said that he had had two cases of salivation which terminated without interference. In one of these the salivation, which began at about the sixth month, was so profuse that the patient used a bed sheet for a handkerchief. The mouth was full of apthæ. There was diarrhœa towards the close of gestation. The patient died a few weeks after labor.

DR. ARNOLD also reported a case of salivation, which began in the early weeks of pregnancy. The discharge of saliva was excessive, but not to the degree in the case reported by Dr. Richardson. The case passed out of his hands, and he afterwards learned that the woman procured abortion for the relief of the symptom.

DR. DRAPER mentioned the case of a patient under his care, who, in her third pregnancy, at four and a half months, was salivating as profusely as described by Dr. Richardson in the case reported by him. The symptom was speedily and permanently controlled by large and frequent doses of bromide of potassium, — fifteen grains hourly till ninety were taken. Salivation had occurred early in her previous pregnancies, and had continued during the whole term in one case, and till the eighth month in the other. In these instances she was under the care of Dr. Whittier, who obtained most benefit from the use of slippery elm.

DR. RICHARDSON said that in the case reported the patient was relieved somewhat, during a week, by fifteen grains of chloral hydrate repeated every two hours; after this the salivation became as severe as ever, and the chloral had no effect. There was no odor about the mouth.

Albuminuria at the Seventh Month of Pregnancy; Severe Gastralgia; Induced Labor; Recovery. — DR. ABBOT read the case.

Gastralgia preceding Convulsions. — DR. HOSMER mentioned a case in which, in the latter stage of the first pregnancy, violent gastralgia occurred, followed in a few hours by convulsions, which terminated fatally. He had seen the same connection of symptoms repeatedly, as well as in the analogous condition in scarlet fever, and so often that the occurrence of decided gastralgia leads him to examine the condition of the urine.

DR. BIXBY reported the following cases: —

A Case of Pregnancy following Ovariectomy in a Subject in whom a former Pregnancy and Parturition were complicated with the Tumor. — Mrs. K., aged twenty-eight, who had menstruated regularly but scantily since the twelfth year, and had been married seven years without offspring, consulted me for her sterility. She was a person of medium stature, with an unusually broad pelvis; the abdomen was covered with dense layers of adipose tissue. She had ceased to menstruate eight days before. Examination showed the uterus to be extremely anteverted, without any evidence of disease. Believing the sterility to be due to a displacement which was occasioned and maintained by pressure from an enormously fat and pendulous abdomen, I temporarily replaced the organ, but, as the principal treatment, ordered a properly fitting abdominal supporter. She was also advised to abstain from fat-producing food. As the catamenia did not return at the usual time, and still were absent at the third month, by the aid of this and other signs I thought I was safe in proving her pregnant. My diagnosis was subsequently confirmed, as reported by Dr. Reynolds.

I have often had occasion during ovariectomy upon patients with unusually fat abdomens to satisfy myself of the validity of the fact that the pressure upon the uterus causing and maintaining both forward and backward displacement is due to the accumulation of fat upon the omentum and intestines, as well as upon the abdominal walls. This would seem to prove conclusively the comparative inutility of the treatment of uterine displacements in fat subjects by internal supports alone.

Malignant Disease of the Uterus. — Mrs. K., aged fifty-four, mother of four children, has repeatedly suffered from severe hæmorrhages. Passed the climac-

teric at fifty. Two years before, she commenced to suffer from profuse leucorrhœa, at times sanious, and latterly decidedly purulent. Emaciation had been very rapid during the past year; at no stage has she suffered from pain. Examination showed the inguinal glands enlarged; cervix uteri indurated, but intact; labia thin; os patulous and filled with a soft, grayish-white, curdy substance; movements of the organ limited; discharge profuse, fœtid, and purulent.

Diagnosis, malignant disease. Treatment palliative. Two weeks later I was summoned to see the patient at her home. I found her in bed, exceedingly feeble from the effects of a powerful cathartic taken of her own accord to relieve the pressure and tenesmus caused by the enlarged uterus. The discharge continued very profuse; was purulent and highly offensive. Dr. D. H. Storer saw the patient, and agreed with me in regard to the diagnosis and prognosis. Death took place ten days later, apparently from septicæmia.

At the autopsy the uterus was found to be about five inches in length. Its entire fundus was degenerated, cheesy, and soft as a curd. The adhesions were principally about the cervix. The fundus was free. Dr. Fitz, to whom the specimen was submitted, was unable to form a positive opinion as to the nature of the disease; it seemed like sarcoma, but was possibly a mixed case. The inner surface at the fundus presented a ragged aspect.

DR. FIFIELD quoted the remarks of Aveling, in the last *Obstetrical Journal*, upon the influence upon conception of position in coitus.

DR. ABBOT mentioned a novel and effectual expedient adopted by a patient with anteversion. She was a thin person, and contrived for herself an effectual supporter by placing above the pubes an India-rubber ball, which was kept in place by a snug bandage.

Large Abdomen in the New-Born Child.—DR. HODGDON reported the further history of the patient exhibited by him at the meeting in February. It did well till at the age of two months, when it died of pneumonia. An autopsy was made by Dr. Fitz, who found a thickened and distended bladder and ureters. The detailed result of the examination by Dr. Fitz will appear among the reports of the Boston Society for Medical Improvement, to be published hereafter.

Cases of Scarlatina, complicated, one with Thoracic Inflammations, the other with Hæmorrhage, probably from the Fauces.—DR. HOSMER reported the cases. The first case was that of a female aged six, born of a primipara, by a breech presentation. I was called to see her January 31, 1877, on the seventh day of a scarlet fever, of which the primary symptoms had been of very moderate intensity, the rash not having been recognized until the fourth day. Advice was sought for a rather severe rheumatic affection which had invaded the wrists, and was then and afterwards limited to those two joints. The next day having brought some relief, no visit was made until the tenth day, when the general appearance of the child, of which the pale, puffed, and anxious countenance was a conspicuous part, showed at once some grave change in the condition of the case. During the night of the tenth day there came on suddenly restlessness, fever, pain in left chest, dyspnoea, and sleeplessness; all this without rigor then or at any subsequent stage. A well-marked double friction

sound heard over the heart concluded the evidence of pericarditis, as I saw the case on the tenth day. There was no albuminuria, although the condition of the face at first suggested that symptom.

On the twelfth day of the scarlatina, and the fifth of the pericarditis, there came an attack of pneumonia, beginning in the central portion of the left lung, and extending upwards and forwards to the subclavicular region. At one time the hepatization was quite extensive, and at one point in the back could be obtained that increased resonance under percussion which consolidated lung may give when covered by a layer of healthy pulmonary tissue of the proper thickness.

February 7th, the fourteenth day of the scarlet fever, the seventh of the pericarditis, and the third of the pneumonia, the figures in the case were: temperature 100° F.; pulse 136; respiration 54. Two days later, they were as follows: temperature 98.4° ; pulse 108; respiration 36. This was the starting point of convalescence, which from this time was uninterrupted as far as related to the thoracic inflammations. At the usual period in such cases there came a renal affection, with the ordinary symptoms, — albuminuria, œdema, anæmia, etc. But this portion of the case was not severe, although a little tedious in its rate of progress. The child made a complete recovery.

While the foregoing case was under observation it became evident that a younger sister, aged two years, was suffering from scarlatinal influence, although there had been no distinct explosion of the usual primary symptoms.

On the night of February 23d, there came a sudden change, and I was called with the urgent message that the child was attacked with the croup. I found no symptoms at all pointing towards the larynx: the whole trouble was in the pharynx and posterior nares, — moderate swelling, redness, dysphagia, and without visible exudation. Cervical glands were slightly swollen. From this time there was an amount of discomfort, and a degree of general sickness which were quite out of proportion to anything that could be discovered in the local condition of the throat.

March 13th there came a profuse hæmorrhage, more than half a pint, from the mouth. The blood was dark in color, and at one time so abundant in its flow as partially to asphyxiate the child. At the end of three hours there was no more bleeding. As to the source of this blood, I am sure it did not come from the lungs; I think it did come from the pharynx; possibly from a deep-looking excavation, three eighths of an inch in diameter, situated between the two pillars, just above the left tonsil. The impression made upon the child by this large loss of blood was serious and unmistakable, but did not prevent it from making a very good recovery in the end.

DR. SINCLAIR remarked that he had observed the subsidence of pneumonia between the sixth and seventh days in a child.

DR. HOSMER said that Dr. A. Hewsen, of Philadelphia, when advocating the dry-earth treatment by external application in scarlet fever, declared that he had known it to effect a reduction of ten degrees in the temperature in the course of the day, from morning to night. Upon being asked what degree was the starting-point, he answered 115° .

TYSON'S CELL DOCTRINE.¹

It is a very good sign of the times that another edition of Dr. Tyson's excellent work should have been called for, as it implies a good deal of interest among students in theoretical studies which, if not of practical application, are at least a part of a good education. The observations on cells during the past eight years are of enough importance to demand notice in a book with the above title. Dr. Tyson has done his work well. He has not been content to tack on some additional pages, but has thoroughly revised the whole book, rewriting some parts of it, and has much enlarged the bibliography. Among the most important of recent contributions to this subject are undoubtedly those of Klein on the structure of the nucleus. We are glad to find them clearly stated, and also that Dr. Tyson has seen fit to introduce one of Klein's plates. The chapter giving the views of the author is very satisfactory reading. We take delight in the clearness with which it is shown that the cell wall, when it exists, is a secondary, if not an accidental, product. We regret only that the author did not, if even in a foot-note, do as much for the artificial membranes of red blood corpuscles. We might be disposed to differ from the author's conclusion concerning the intercellular substance, which he believes to be a modification of the outer part of the cell, not that we think this impossible, but rather doubtful; and having said this our stock of criticism is at an end. We hope that the book will have an extensive circulation.

T. D.

ANNUS MEDICUS 1878.

WITH the present number of the JOURNAL our year 1878 is brought to a close; before taking a final leave of the departing, a hasty glance at what he has brought to us and what he has taken from us will not be devoid of interest. Without being marked by extraordinary discoveries in medicine or the sciences immediately allied thereto, it has still been a year of steady and general advancement and development in all branches of practical medicine and of the medical sciences. For exact details in support of such an assertion we do not know where to refer the curious reader with greater confidence than to the reports on progress and the medical notes in our own columns, which are at once full, succinct, and catholic. A few of the more prominent movements and realizations of 1878 will bear repetition.

In making up his epitaph, the first question to be put to the record of the past year is, What has he done for the elevation of the standard of medical education in the United States especially? We give the coming years fair warning that it will be impossible to furnish them with satisfactory obituaries unless their characters withstand well this fundamental test.

As much has been effected, perhaps, towards improving the standard of medical education in the past twelve months as could have been reasonably expected, though not enough, fortunately, to still the just and earnest impatience of the enthusiastic agitator. Harvard University is steadily advancing at the

¹ *The Cell Doctrine: Its History and Present State.* By JAMES TYSON, M. D. Second Edition. Philadelphia: Lindsay and Blakiston. 1878.

front, quietly content with success and a consciousness that she deserves it, whether recognized or not. A preliminary examination has been the latest step.

A preliminary medico-scientific course of three years has been opened by the Johns Hopkins University, terminating in a degree of B. M., to be followed probably by a four years' medical course for the degree of M. D. The length of time, seven years, is ample, and the details well laid out to produce thoroughness. By some of those who have regarded the resources and opportunities of this university with the greatest respect, the fear has been expressed that the preliminary course might be narrowing, and the degree of M. B. liable to abuse, a fear not shared by the trustees and officers of the university, and time may show these latter to be right. A full three years' course has been adopted in Philadelphia, in New York, and by one or two schools at the West; and a not altogether discouraging sign of the tendency of the day is the pretense of virtue even in some quarters where they have it not. In Great Britain the different licensing bodies have been involved in an evolution out of which the fittest has not yet emerged, and there comes from England a lament over too multiplied medical schools with which we sympathise. France has at last appointed three professors of specialties in the Paris School, and has fortified medical education in the provinces notably by the addition of the schools at Lyons and Bordeaux. The German government is rapidly making of Strasbourg a great medical and scientific centre.

From medical education in general we pass naturally to that of women, affecting which we have to record two important steps.

The University of London has thrown open all its degrees of every kind, medical included, to women under exactly the same condition as to men; and University College, London, has agreed to open the whole of its classes, *except* those in medicine, to women. After some years of experience in opening all courses, public and private, to women, the medical faculty of Vienna have felt compelled to exclude them entirely in future from everything except the lectures on obstetrics and diseases of women of Dr. Gustav Brown. These two steps, though apparently in opposite directions, are really harmonious and in accord with the present attitude of Harvard University, namely, that she will undertake the medical education of women if those who desire it will furnish the funds for a separate education. It gives us pleasure to enter to the credit of the year the adoption of the metric system of weights and measures by the United States marine hospital service; its strong recommendation to the profession by the American Medical Association at its annual meeting; the vote of the Pennsylvania State Medical Society to use it in all communications in which reference to weights and measures is made; the adoption of its use in the pages of the *Chicago Medical Journal*. The year has not been without its calamities, and must consent to have its memory associated with one of the most extended and distressing famines in Northern China of which history offers any notice; we spare the reader any statistics of deaths, which were but a release from irremediable sufferings. It has also brought to us a visitation of yellow fever unequalled in its ravages, and, — strange contrast! — our affliction was spread and intensified by the very facilities for rapid transit whose absence proved so fatal in China. This epidemic of yellow fever will

be remembered as having extended over an unprecedented area, without discrimination as to age, race, color, or locality; as having exacted 20,000 victims, of whom at least one hundred were physicians; and as having cost the country nearly \$200,000,000. Let us hope that our successors may also think of the year in connection with an appropriation of \$50,000 by Congress, and the beginning of such an investigation into the disease as shall fix upon the present epidemic the unenviable notoriety of being the greatest and the last. We still cherish a hope; are those who come after us to have more? Even so enormous an evil has attendant good; the past six months have engendered a recognition of the importance of a national board of health, and an impulse toward its establishment which bids fair to result another year in an accomplished fact. Should its head be a member of the Cabinet? is already a question. May the *board* at least be kept out of politics!

We notice with much satisfaction the birth of boards of health in the States of Rhode Island and Connecticut; others may have escaped our notice. Then there is the advent of several new journals, both at home and abroad, among which are to be mentioned *The Journal of Physiology*, edited conjointly and published simultaneously in the United States and England; *Brain*, a quarterly journal of neurology in England; a new *National Medical Review*, published in Washington; *The Philadelphia Druggist and Chemist*; and a new medical periodical in Germany, *Archiv für Geschichte der Medicin und Medicinische Geographie*. Our table of genesis might be completed by an enumeration of various new associations, but the length of the titles and the fear of omitting a large number of them restrain us. We are not ashamed, however, of the local pride which betrays us into a parsimonious mention of the organization and first annual meeting of the Massachusetts Medico-Legal Society; of the good work given by it to the public on that occasion, and the assurance thus afforded of the satisfactory working of the new inquest law, as far as may lie with our profession; of the installation of the Massachusetts Library Association in a new building of its own, containing comforts and conveniences which will make the compilation and the perusal of the *anni medici* of our successors a delight. Worthy of exceptional mention is the creation by the general government of a national quarantine board with a central bureau, to which we are indebted for the valuable sanitary reports which now come to us every week from all parts of the world. Washington has also given us a first fasciculus of the contemplated index to the National Medical Library, which only makes us the more instant with Congress to provide for the completion of this great and invaluable labor.

The old societies and associations have held their usual meetings. These sometimes produce valuable work, and always serve to refresh hard workers, and to bring together congenial spirits. Paris has had an International Congress of Hygiene. The annual meeting of the American Medical Association at Buffalo offered unusual interest, and from that of the Public Health Association at Richmond much — perhaps too much — was expected.

The year shall not leave us without carrying with it another tribute to Dr. H. J. Bigelow's simple discovery — for such we insist upon calling it — of the tolerance by the bladder of protracted manipulation with a smooth instrument, and the consequent introduction of the operation for rapid lithotripsy, now

called litholapaxy. We shall so far borrow from our reports on progress as to mention the attention given during the year to metalloscopy and metallothrapy; the interesting investigations of Dr. Gowers, of London, and others, into the minute pathology of hydrophobia; and the creditable experiments of Drs. Garland and Rotch, of Boston, in regard to the form and position of pleuritic and pericardial effusions. A more extended and careful survey of the field will show that everywhere earnest laborers are at hand to take the places of those who have completed their tasks.

Though our space is scant for a too extended necrology, we would willingly devote a little of it to the demise of the delusion of homœopathy, from which a sad wail comes up of a want of faith among the old, and a want of neophytes among the young; its pulse is very low as we go to press.

Among the number of those who sleep from their labors we find this year, as usual, more and better men than we could wish.

In this country we have lost Dr. L. P. Yandell, of Louisville, Ky., at the age of seventy-three years, for fifty years one of the most widely known practitioners of the West; Dr. J. E. Tyler, of Boston, former superintendent of the McLean Asylum for the Insane, aged fifty-eight; Francis Gurney Smith, Jr., M. D., of Philadelphia, professor of institutes of medicine in the University of Pennsylvania, aged sixty-one; E. R. Peaslee, M. D., LL. D., of New York, surgeon to the New York Woman's Hospital, aged sixty-four; Dr. George H. Gay, surgeon to the Massachusetts General Hospital, aged fifty-five; Dr. W. L. Atlee, of Philadelphia, whose name will be long remembered in connection with ovariectomy, aged seventy; Prof. Eli Geddings, M. D., of Charleston, S. C., aged eighty; Dr. Wm. B. Morris, of Charlestown, Mass., aged fifty-two. Among those of riper years, in addition to Professor Geddings, we may mention the death of Josiah Bartlett, M. D., of Concord, Mass., aged eighty-one, a worthy successor to a worthy father; of Samuel Hart, M. D., of Brooklyn, L. I., aged eighty-two; of Dr. B. R. Robson, of New York, aged ninety-three; of Dr. Edward Warren, of Boston, the youngest son of Dr. John Warren, aged seventy-three. Turning abroad, we have to lament Claude Bernard, the distinguished physiologist, who died in Paris in his sixty-fifth year; Leon Voillemier, Paris, aged sixty-eight, a distinguished French surgeon, who first described accurately, in 1842, the fracture of the lower end of the radius known as Colles; Caventon, aged eighty-two, a well-known French chemist, who, with others, discovered strychnia, brucia, and other alkaloids; Regnault, the chemist; Becquerel, the physicist; Professor Hirtz, of Nancy; in Germany, Professor Bartels, of Kiel, and Professor Dietl, of Krakow; in Austria, Professor Rokitsansky; in Italy, Professor Ghinozzi, of Florence. When we turn to Great Britain there are Dr. William Stokes, F. R. S., of Dublin, author of *Diseases of the Heart and Aorta*, deceased in his seventy-sixth year; Dr. Fleetwood Churchill, of Dublin, at Tyrone, in his seventieth year, whose name is familiar to us all in connection with obstetrics and diseases of women; James Blundell, M. D., London, in his eighty-seventh year, a famous and eccentric practitioner in London fifty years ago; and Henry Jephson, M. D., of Leamington, who passed away in his eightieth year, and whose memory will be dear to all professional brethren as that of a provincial prac-

tioner who thirty years ago earned an income of £24,000, but they should not forget that health was sacrificed to its acquisition.

This mortuary list could, we regret to say, be much prolonged, but we have had space for only some of death's shining marks in different countries. With this we take leave of the year 1878. We wish our readers a very happy New Year, and we bid him take heed to his ways, for have we not the microphone to make audible the lightest step, and are we not promised the electric light by which the hidden things shall be revealed?

MEDICAL NOTES.

NEW YORK.

— The fifth anniversary of the Training School for Nurses, in connection with Bellevue Hospital, was celebrated December 4th. The building occupied as the Home is in East Twenty-Sixth Street, near the hospital, and has been fitted up very completely for the accommodation of nearly seventy nurses. The exercises were held in the dining-room, and the address to the graduates was made by Prof. Wm. H. Van Buren; while Mrs. Alexander Hamilton, the president of the institution, presented the diplomas, twenty in number. From the annual report, read on this occasion, the following information was gathered: The school was opened in May, 1873, with six nurses and a superintendent, who were in charge of six wards of Bellevue Hospital, containing forty-three patients. Now there are fourteen wards, under the charge of sixty regular nurses, and 1959 patients have been cared for by them this year. During a portion of the year five nurses have been acting under the direction of the superintendent of the female branch of the city mission, and one of these ladies attended 131 cases in six months, while the total number of visits made by the five was 2472. They are paid by private subscription, and it is hoped that in time each church in the city will have such a nurse in its employ to take care, under medical advice, of its sick poor. Twenty-four young ladies have been admitted to the training school since January 1st, and are now qualifying themselves for the position of nurse. Fifteen of the number had not previously supported themselves, while the others were teachers, or had been engaged in literary works. Graduates find no difficulty in obtaining employment either in hospitals or private families.

— Dr. Andrew Clark, F. R. C. P., the distinguished lecturer on clinical medicine and diseases of the lungs in the London Hospital, who was recently sent out on a special mission to accompany the Princess Louise on her voyage across the Atlantic, received a very warm welcome during his short visit in New York. He arrived on Saturday, December 7th, and left for England early on the morning of the 11th; but, notwithstanding the briefness of his stay, he accomplished as much as the emperor of Brazil would probably have done during the same time. He was intensely interested in all that he saw, and on one of his numerous visits to the public schools made an excellent address to the pupils. The day before he sailed he delivered a lecture on the pathological and clinical features of the various forms of phthisis, at the Belle-

vue College, before a crowded audience of the practitioners and medical students of the city, and it was agreed by all that it was a model of conciseness, style, and appropriateness of expression. As Prof. James R. Wood stated, in some complimentary remarks at the close of the lecture, never before had the subject been so clearly and admirably presented in New York. The various points touched upon were illustrated by a large number of exquisite plates in water-color, which were painted directly from pathological specimens removed from cases which had been under Dr. Clark's care. During his sojourn in the city he was the guest of Dr. Sayre, and the evening before his departure the latter gentleman gave a reception to a limited number of the profession in his honor. Dr. Clark won golden opinions from all who saw him, and his popularity as a physician is justly great.

— The New York College of Pharmacy gave a sort of house-warming on the evening of December 10th, and on this occasion a congratulatory address was delivered by the President, Mr. Ewen McIntyre, and the history of the college from its organization in 1829 was read by Professor C. F. Chandler. The structure now occupied by it, which is located on Twenty-Third Street, was formerly a church, but has been altered to suit the purposes of the institution; and it is the first building that it has ever had of its own.

MASSACHUSETTS GENERAL HOSPITAL.

SURGICAL CASES OF DR. WARREN.

Twelve Cases of Disease of the Breast and Axilla operated upon with Antiseptic Precautions. — The following cases include all that were performed by Dr. Warren during a spring and summer service with the exception of one, a woman sixty-nine years of age, who succumbed under a mild erysipelas following a plastic operation for a small cancer of the lower lid, removed at the same time as the diseased breast. It was interesting to note that the wound under the Lister dressing showed no sign of disturbance during the attack, and at the time of death had healed by first intention excepting the small opening made by the drainage tube. In several cases the dressing was applied as a swathe round the chest, but it was found that this method had considerable disadvantages; the wound was brought too near the edge of the dressing, and, if it extended into the axilla, could not be covered properly. Even in favorable cases it was necessary to draw the edge of the dressing very tight, to prevent the entrance of air, producing undue pressure at certain points. This difficulty was overcome by bringing the arm to the side over the various layers of gauze, and packing the inequalities of surface with salicylic cotton, which was also applied over the arm and shoulder, the whole being held firm by a broad swathe round the arm and body, supported by a towel pinned, suspender fashion, over the shoulder. This formed a very secure dressing, insuring as perfect rest as possible on the thorax, and effectually excluding the air. In this series it will be seen there are two deaths, and two cases which survived an attack of erysipelas. An adequate explanation of these accidents seemed to offer itself in each case.

CASE I. C. E. W., forty-seven years old, a married woman, had noticed the disease for about six months. It grew rapidly and presented quite a large tumor, the glands in the axilla being involved. It was freely movable, and there was plenty of integument to spare. The growth was removed in the usual way, the incision being continued into the axilla where a careful dissection removed all enlarged glands. When sewed up there were two long wounds, one occupying the mammary and the other the axillary region. Unfortunately, as the result showed, a drainage tube was placed in the axillary portion alone — this being thought sufficient to drain both wounds from its dependent position. There was some oozing of blood, and when the dressing was changed on the third day a large amount of dark-colored fluid was squeezed from the tube. On the fifth day the discharge, which in the mean time had collected in considerable quantity, had become offensive, and soon became purulent. The temperature remained high at the end of the week, and on the ninth day a chill occurred. This was repeated almost daily, and the characteristic temperature of pyæmia developed, the thermometer rising and falling several times during the twenty-four hours. The dressings were removed, the wound laid open and carefully drained, and a poultice was applied. Although it now appeared quite healthy the blood-poisoning continued, and the patient died on the twenty-fourth day. The cause of death was evidently inefficient drainage of a wound containing an unusually abundant secretion which the Lister dressing failed to keep from decomposing.

CASE II. E. J. B., fifty-four years old, had noticed a lump in the breast but six weeks before for the first time. It was about the size of a silver dollar and not very hard. There were no glands in the axilla. The diseased breast was removed under antiseptic precautions, and was found to be typical cancer. The drainage tube extended nearly the whole length of the wound — which was about six inches long. It could hardly be said there was any traumatic fever in this case, the thermometer going above 99° F. only in the evening of the second day, and on that occasion did not reach 100° F. The wound healed by first intention, but a small sinus remained to mark the course of the drainage tube and did not heal for several weeks.

CASE III. C. N., a German widow, sixty-seven years old, had first noticed the disease three years ago. It involved the whole breast and part of the axilla; at the junction of the mammary and axillary regions the skin was involved in the disease, and there was considerable inflammatory redness about it. The breast came away easily, but it required some careful dissection to reach all the axillary glands. The patient did well at first, but about the end of a week erysipelas appeared and continued for two weeks, running over the chest, back, and abdomen. Some sloughing of the connective tissue took place in consequence, and the wound gaped slightly at the point of exit of the drainage tube, but the patient left the hospital a month later with a small granulating surface at that point, and in good general condition. During the presence of the erysipelas a poultice was substituted for the antiseptic dressing.

CASE IV. M. C., forty-nine years old, an American widow, had noticed a tumor of the breast nine months before. On entrance the growth was found to be nearly the size of a cocoa-nut, and at one point had ulcerated through the skin which was inflamed for some distance. The axillary glands were

involved. As the tumor was movable and the skin abundant, it was decided to undertake an operation. The parts were poulticed for a day or two, and the patient kept in bed to allay the inflammation. The incisions made a wound nearly a foot in length. The dissection in the axilla was deep and difficult, and the axillary vein, being adherent to one mass, was divided and tied. The temperature of the first few days was high, but on the evening of the third day was but 102° F. It did not continue to fall, however, and on the sixth day a change of dressing disclosed an erysipelas. The Lister dressing was removed and carbolic cloths were substituted, the wound being washed twice a day. Quinine was given freely; the disease spread over the back and chest, the wound became foul, and on the thirteenth day a slight venous hemorrhage occurred; this was repeated twice, and on the fifteenth day the patient died. The temperature during the last few days was taken every two hours, and vacillated as in the other case. An examination of urine two days before death showed the presence of numerous casts.

CASE V. A. T., negress, fifty-nine years old, entered with a lump the size of a fist, of two years' standing. On removal it was found to be a cyst with a small nodule of cancer. The arm was placed at the side and included in the usual dressing, which was reinforced with large quantities of salicylic cotton. The wound healed by first intention, but a small granulating spot marked the tie of the tube at the end of a month, when the patient was discharged. Temperature was always below 101.5°.

CASE VI. P., aged fifty-two, entered with a tumor of left breast, about the size of an orange, of five years' standing. There were no enlarged glands in the axilla. As the spray apparatus was not in working order the usual Lister precautions were not taken. The wound was, however, carefully syringed out with carbolic acid (1 to 40 solution); after the stitches had been taken a tube was left in and carbolized compresses covered over with salicylic cotton were applied. Owing to oozing from the wound the dressing was renewed the same evening. The temperature did not rise above 99.5°; the wound healed by first intention, the tube being withdrawn gradually, and on the fourteenth day there was solid union everywhere.

CASE VII. M. E. M., thirty years old, had noticed a lump in right breast four months before entrance. It grew to the size of an egg. The breast was removed with antiseptic precautions. The temperature was that evening at its highest, namely, 100.2°. The wound healed by first intention. The tube was removed on the seventh day. A few days later a small collection of pus formed in the track of the tube and was evacuated by a puncture with the knife. Healing went on after this uninterruptedly, and the patient was discharged in a little over three weeks.

CASE VIII. C. M., thirty-five years old, entered for a fractured thigh, and when this had united desired an operation for the removal of a scirrhous of both breasts. One of seven years' duration, the other a small nodule of five months' standing. The right breast was removed entirely, and also a large number of small glands in the axilla, the dissection extending up to the clavicle. Two tubes were placed in the wound, one for the axilla, the other for the breast. A small tube was also placed in the incision made for the removal of the nodule in the right breast. The wounds healed by first intention except

in the track of the tubes and a small spot in the right breast, which was still open on the eleventh day, when Lister treatment was no longer continued.

CASE IX. S. E. A., forty-eight years old, pale and thin, entered with a cysto-sarcoma of the left breast of nine months' duration. There was no disease in the axilla. There was an unusual amount of bleeding at the operation. In this, as in all antiseptic cases subsequent to Case IV., the arm was placed at the side and with the shoulder was inside of the salicylic and outside of the gauze dressings. The temperature was above normal one day only. The wound healed by first intention. The last bit of tube was removed on the twenty-first day and the spot occupied by it healed immediately.

CASE X. J. B., thirty-five years old, entered with a myxo-adenoma of the left breast of six months' standing. It was removed through a linear incision about four inches in length. The tube was taken out on the eleventh day, and a day or two later union was perfect throughout. Slight rise of temperature for three days.

CASE XI. A. M. R., forty years old, entered with a scirrhus of the right breast of a year's duration. There were glands in the axilla, the removal of which left a pocket at the most dependent portion of the wound. A large trochar was thrust through the lowest point of this pocket and a tube passed through the canula, which was then withdrawn. The wound was then stitched up through its whole length. A string was attached to the end of the tube, and passed out through the gauze for the purpose of withdrawing gradually the drain without disturbing the dressing. On the tenth day the tube was entirely withdrawn and three days later, when the dressing was removed, there was perfect union throughout. There had been one or two changes of dressing in the early stage of after-treatment.

CASE XII. S. A. E., a delicate American, forty-eight years old, entered for the removal of some diseased glands in the axilla following an operation upon the breast, performed a year before, at which time she had a phlegmonous erysipelas. The dissection of the axilla was extensive; the wound, however, did well, and had nearly become solid, when a mild, ambulating erysipelas broke out under the Lister dressing, and lasted for a week or ten days. The healing process was not materially interfered with.

There were two deaths, one from pyæmia, and one from erysipelas, although in each the growth was far advanced, and the dissection of the axilla more extensive than is usually necessary even in average bad cases. The cause of death is hardly to be sought for in the severity of the operation. In Case I. it is interesting to note that the dressing did not save a badly drained wound from pyæmia, while in Case VI., which was not a strict Lister, decomposition was prevented, and first intention ensued by the use of a carefully adjusted tube. In Case IV., as in Cases III. and XII., it was evident that the seeds of erysipelas were brought by the patients with them to the hospital. In two of them we have an advanced stage of disease, the skin involved in one already ulcerating, and in both considerable inflammation, so that rest and soothing applications were found necessary as preparatory treatment, which, nevertheless, did not protect the already infected edges of the wound from developing the disease beneath the dressing. In Case XII. erysipelas was expected from the history of the case, and its outbreak suggested the presence in the tissues of the

germs of the extensive phlegmonous erysipelas occurring after the operation a year before.

As an offset to these unfavorable results we have eight cases, consecutive in point of time, with one exception, which healed by first intention, and in them it should be said there was almost no constitutional disturbance and locally no swelling, the skin and stitches appearing to the end as in a freshly made wound. There was some difficulty in managing the tube so as not to leave a small sinus after removal. By withdrawing the tube, usually extending the whole length of the wound, very gradually the difficulty was overcome, and this was nicely accomplished in one case by a device of Mr. Mixter, house-pupil, consisting in attaching a string to the tube and passing it through the meshes of the dressing, thus controlling the tube without removing the gauze. When a gradual withdrawal of the tube was effected, beginning the second or third day, and terminating about the tenth day, the track of the tube filled up immediately behind it, and the terminal opening closed as soon as the last fragment was removed.

SHORT COMMUNICATIONS.

BULLETIN OF THE PUBLIC HEALTH.

ISSUED BY THE SURGEON-GENERAL U. S. MARINE HOSPITAL SERVICE, UNDER THE NATIONAL QUARANTINE ACT OF 1878, FOR THE WEEK ENDED DECEMBER 14TH. No. XXIII.

OFFICE SURGEON-GENERAL M. H. S., WASHINGTON, December 18, 1878.

YELLOW FEVER.—During the week the only deaths reported were two at Memphis on the 10th and 12th inst.

BURLINGTON, VT.—Month ended November 25th. Deaths from all causes 22, an annual ratio of 16.5 to each 1000 of the population. Four deaths from diphtheria.

MASSACHUSETTS.—For the week ended December 7th, in sixteen cities with an estimated aggregate population of 742,000, there were 274 deaths, an average annual rate of 19.25. The local death-rate ranged from 0 at Pittsfield (population 12,600) and 10 to 12 at Chelsea, Newburyport, Gloucester, Cambridge, and Worcester to 21.12 at Boston, 26.60 at Salem, and 42 at Fall River. In the latter city the death-rate from the principal "zymotic" diseases was nearly 25 per 1000 of the population. The average death-rate from these diseases in the sixteen cities was four.

BOSTON, MASS.—Week ended December 14th. Total deaths 137. Annual ratio 22. Seventeen cases of scarlet fever, three deaths. Fifteen cases of diphtheria, 10 deaths.

PROVIDENCE, R. I.—Month of November. Total deaths 165. Annual rate 12.80. Deaths from phthisis 29, from pneumonia 12, from diphtheria 32, from scarlet fever two.

NEW YORK CITY.—Week ended December 14th. Deaths from all causes 495. Annual rate 23.6. Phthisis caused 94 deaths, pneumonia 51, bronchitis 30, scarlet fever 36, diphtheria 21, enteric fever five.

HUDSON COUNTY, N. Y., including Jersey City and Hoboken. In the month of November, in an estimated population of 180,000, there were 294 deaths, 42 being from diphtheria and croup, 12 from scarlet fever, three from enteric and five from "malarial" fever, 39 from phthisis, 28 from pneumonia. Annual rate 20.

BROOKLYN.—Week ended December 14th. Total deaths 184. Rate 17.4. Seventy-one cases of scarlet fever, seven deaths, 42 cases of diphtheria, seven deaths. Twenty deaths from phthisis.

PHILADELPHIA.—Two weeks ended December 14th. Total deaths 601. Annual rate 17.6. Thirty-two deaths from diphtheria (minors), 24 from scarlet fever.

BALTIMORE.—Week ended December 14th. Total deaths 95. Annual ratio 14. From scarlet fever four deaths. From enteric fever three, from diphtheria three, from phthisis 17.

CLEVELAND. — Week ended December 14th. Total deaths 47. Annual rate 15. Four cases of scarlet fever, two deaths; ten cases of diphtheria, eight deaths.

CINCINNATI. — In the four weeks ended December 14th the deaths from all causes were respectively 96, 96, 111, and 83. From scarlet fever 16, 18, 26, and 17. Phthisis 12, 17, seven, and nine. Pneumonia and bronchitis five, nine, nine, and four. Annual rate 18, 18, 20, and 15. During 1878 one death from small-pox.

MILWAUKEE. — Week ended December 7th, 28 deaths. Ratio, 12. Sixteen cases of diphtheria, two deaths.

ST. PAUL. — In the three months ended November 30th there were 120 deaths. Annual rate 13. In June, July, and August deaths numbered 137, an annual ratio of 15.

ST. LOUIS. — For the two weeks ended December 1st there were 221 deaths, an annual ratio of 11.5 in the estimated population. Scarlet fever caused two deaths, diphtheria 16, enteric fever six, phthisis 28, pneumonia 21.

NORFOLK. — In November 43 deaths, nine being from phthisis, five from pneumonia, 11 from "zymotic" disease. Annual death-rate 22.4

CHARLESTON. — Week ended December 7th. Twenty-six deaths. Annual rate 26.

SAVANNAH. — Week ended December 13th. Twenty-five deaths. Annual rate 46.4.

NEW ORLEANS. — For the three weeks preceding December 8th the total deaths numbered respectively 104, 100, and 88. From yellow fever 14, 4, 2, "malarial" fever 10, 7, 5, from phthisis 7, 14, 9, pneumonia 7, 9, 6.

HAVANA. — Week ended December 16th. Nine deaths from yellow fever, five from small-pox.

RIO DE JANEIRO. — Week ended November 9th. Two hundred and forty-three deaths, small-pox causing 65. Of 1321 deaths in October, 453 resulted from this disease.

GREAT BRITAIN. — Week ended November 23d. In 23 cities having an estimated population of 8,374,000 there were 3976 deaths, an average rate of 25 per 1000, ranging from 14 at Portsmouth and 17 at Brighton to 24 at Birmingham, 26 at Manchester, and 29 at Liverpool. The percentage of deaths from the principal preventable diseases varied from less than one at Portsmouth, Brighton, Plymouth, and Bristol, to five at Dublin, and 6.4 at Liverpool.

LONDON. — Week ended November 23d. The total deaths numbered 1546, an annual ratio of 22.6 against 20.2, 23.2, 24.3 in the three preceding weeks. Bronchitis caused 207 deaths, pneumonia 107, scarlet fever 54, diphtheria 11, small-pox 7. There were 149 cases of the latter disease in the hospitals on November 23d. In inner London the death-rate was 22.6; in the outer suburban ring 17.9.

DUBLIN. — Week ended November 23d. Deaths 213. Annual rate 35. Nineteen deaths from phthisis, 46 from bronchitis, 6 from scarlet fever, 11 from small-pox; 69 cases of the latter disease in the hospitals.

AT CORK the death-rate for the week was 38; at Derry 17; at Belfast 32. In the latter city 13 per cent. of all the deaths in October were caused by scarlet fever.

IN GALWAY the death-rate for the week was 42. Small-pox is still prevalent, and caused 32 per cent. of all the deaths in the preceding month.

GERMAN EMPIRE. — In 148 cities and towns of more than 15,000 inhabitants and an aggregate population of 7,451,536, during the week ended November 9th there were 3336 deaths, an annual ratio of 23.3 against 22.7 in the preceding week. Phthisis caused 424 deaths, pneumonia 260, diphtheria 180, scarlet fever 117 deaths; 32.5 per cent. of all the deaths were among children less than one year of age. But one death in the empire from small-pox (at Breslau).

BERLIN. — In week ended November 9th 465 deaths, an annual rate of 24.5. Phthisis caused 56 deaths, diphtheria 36, scarlet fever 23.

For the week ended November 9th the death-rate at Breslau was 24, at Munich 33.7, at Dresden 21.8, at Leipzig 17.4, at Hamburg 22.8, at Cologne 26.6, at Frankfort 15.7, at Strasbourg 26.3.

VIENNA. — Week ended November 9th. Deaths from all causes 378. Annual ratio 27; 88 deaths from phthisis, 42 from pneumonia, 29 from diphtheria, 5 from scarlet fever, 6 from small-pox.

PARIS. — Week ended November 9th 870 deaths, 163 being from phthisis, 100 from pneumonia, 25 from diphtheria, 20 from enteric fever. Annual rate 22.8.

AFRICA, TANGIER. — Cholera is disappearing from the interior cities of Morocco where it has prevailed for some months with great severity. At Casablanca in the week ended October 12th there were 53 deaths from cholera, and 27 from small-pox. In the week ended October 19th cholera caused 5 deaths, and small-pox 17. (See Bulletin No. 22.) The latest weekly returns from the following cities show the average annual death-rate: at Madras 51.4, Odessa 46.5, Buda-Pesth 41, Calcutta 38, Alexandria 45, Cracow 38, St. Petersburg 32, Venice 31, Warsaw 30, Lisbon 29, Naples 22, Rome 21, Copenhagen 17, Stockholm 17.

JOHN M. WOODWORTH,

Surgeon-General U. S. Marine Hospital Service.

NOTE. As soon after January 1, 1879, as practicable the "Bulletin" will be printed in tabular form, and extended as far as useful and practical. Health officers and registrars of vital statistics, who have been requested to furnish information, will aid in imparting to it the practical value it is desired it should possess by forwarding their mortality returns as promptly as possible.

COMPARATIVE MORTALITY-RATES.

	Estimated Population, July 1, 1878.	Deaths during week ending Dec. 14, 1878.	Annual Death-Rates per 1000 living.		
			For the Week.	For the Year 1877.	Mean for ten Years, '68-77.
New York.	1,093,171	495	23.54	23.42	28.71
Philadelphia.	876,118	306	18.16	18.80	21.54
Brooklyn.	549,438	183	17.33	21.51	25.50
Chicago.	460,000	155	17.77	17.83	22.39
Boston.	375,476	137	18.97	20.10	24.34
Providence.	100,000	34	17.68	18.81	19.20
Lowell.	55,798			19.09	22.50
Worcester.	54,937	23	21.78	20.06	22.30
Cambridge.	53,547	20	19.42	18.69	20.83
Fall River.	53,207	25	24.44	21.35	24.96
Lynn.	35,528	13	19.03	20.42	19.67
Springfield.	33,981	5	7.66	16.02	19.77
Salem.	27,140	5	9.58	20.38	21.15

THE GYNÆCOLOGICAL SOCIETY OF BOSTON. — The ninety-eighth regular meeting of the society will be held at Medical Library Rooms, 19 Boylston Place, on the first Thursday of January, at two o'clock, P. M. Election of officers and other business pertaining to the annual meeting. Discussion of a phase of intra-uterine inflammation. Paper by R. P. Loring, M. D. At three o'clock doors open to the profession, who are cordially invited to be present.

HENRY M. FIELD, M. D., *Secretary*.

SUFFOLK DISTRICT MEDICAL SOCIETY. — A special meeting will be held in the hall of the Medical Library Association, 19 Boylston Place, December 28th, at seven and a half o'clock. The question of the advisability of removing from the rooms in Temple Place, and the amount which should be paid for the use of the hall in Boylston Place, is to be submitted to the consideration of the society.

The following papers will be read: —

Dr. James J. Putnam. The supposed Cure of Cutaneous Anæsthesia by the application of Metals to the Skin.

Dr. Francis Minot. Cases of Disease of the Spinal Cord.

Dr. B. Joy Jeffries. Color-Blindness.

Supper at nine o'clock.

